

Claims

What is claimed is:

- 5 1. A method for treating a patient with urgency, frequency, urinary
incontinence, and/or fecal incontinence comprising:
 providing at least one stimulator having at least two electrodes;
 implanting the at least one stimulator adjacent to at least one
10 parasympathetic target that innervates at least one urinary, gastrointestinal, and/or other
pelvic structure;
 providing operating power to the at least one stimulator;
 providing stimulation parameters to the at least one stimulator;
 generating inhibitory stimulation pulses in accordance with the stimulation
15 parameters; and
 delivering the inhibitory stimulation pulses to nerves and tissue adjacent
to the at least two electrodes in order to treat urgency, frequency, urinary incontinence,
and/or fecal incontinence;
 wherein the stimulator has a size and shape suitable for placement
20 adjacent to the at least one parasympathetic target.
2. The method of Claim 1 wherein the stimulation pulses are delivered at
greater than about 50 to 100 Hz.
3. The method of Claim 1 wherein the at least one parasympathetic target
25 comprises one or more of the sacral nerve roots and sacral spinal nerves.
4. The method of Claim 3 wherein the at least one sacral nerve comprises
the third sacral nerve.
- 30 5. The method of Claim 1 wherein the at least one parasympathetic target
comprises at least one of the pelvic splanchnic nerves.

6. The method of Claim 1 wherein the at least one parasympathetic target comprises one or more of the rectal, inferior hypogastric, prostatic, vesical, and uterovaginal nerve plexuses.

5 7. The method of Claim 1 further comprising:
providing at least one sensor;
using the at least one sensor to sense at least one physical condition;
and
determining the stimulation parameters based upon the at least one
10 sensed condition.

8. The method of Claim 1 wherein providing stimulation parameters comprises receiving the stimulation parameters from at least one external appliance.

15 9. The method of Claim 1 wherein providing operating power comprises receiving the operating power from at least one external appliance.

20 10. The method of Claim 1 further comprising providing and implanting more than one stimulator.

11. A method for treating a patient with urinary and/or fecal retention comprising:
providing at least one stimulator having at least two electrodes;
implanting the at least one stimulator adjacent to at least one
25 parasympathetic target that innervates at least one urinary, gastrointestinal, and/or other pelvic structure;
providing operating power to the at least one stimulator;
providing stimulation parameters to the at least one stimulator;
generating excitatory stimulation pulses in accordance with the
30 stimulation parameters; and

delivering the excitatory stimulation pulses to nerves and tissue adjacent to the at least two electrodes in order to treat urinary and/or fecal retention;

wherein the stimulator has a size and shape suitable for placement adjacent to the at least one parasympathetic target.

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12. The method of Claim 11 wherein the stimulation pulses are delivered at less than about 50 to 100 Hz.

10 13. The method of Claim 12 wherein the stimulation pulses are delivered at about 20 to 35 Hz.

14. The method of Claim 11 wherein the at least one parasympathetic target comprises one or more of the sacral nerve roots and sacral spinal nerves.

15 15. The method of Claim 14 wherein the at least one sacral nerve comprises the third sacral nerve.

16. The method of Claim 11 wherein the at least one parasympathetic target comprises at least one of the pelvic splanchnic nerves.

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17. The method of Claim 11 wherein the at least one parasympathetic target comprises one or more of the rectal, inferior hypogastric, prostatic, vesical, and uterovaginal nerve plexuses.

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18. The method of Claim 11 further comprising:

providing at least one sensor;

using the at least one sensor to sense at least one physical condition;

and

determining the stimulation parameters based upon the at least one

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sensed condition.

19. The method of Claim 11 further comprising providing and implanting more than one stimulator.

20. A method for treating a patient with urinary and/or bowel dysfunction
5 comprising:
providing at least one stimulator having at least two electrodes;
implanting the at least one stimulator adjacent to at least one sympathetic
target that innervates at least one urinary, gastrointestinal, and/or other pelvic structure;
providing operating power to the at least one stimulator;
10 providing stimulation parameters to the at least one stimulator;
generating stimulation pulses in accordance with the stimulation
parameters; and
delivering the stimulation pulses to nerves and tissue adjacent to the at
least two electrodes in order to treat urinary and/or bowel dysfunction;
15 wherein the stimulator has a size and shape suitable for placement
adjacent to the at least one sympathetic target.

21. The method of Claim 20 wherein:
the stimulation pulses comprise excitatory stimulation pulses; and
20 the urinary and/or bowel dysfunction comprises urgency,
frequency, urinary incontinence, and/or fecal incontinence.

22. The method of Claim 21 wherein the stimulation pulses are delivered at
less than about 50 to 100 Hz.

23. The method of Claim 20 wherein:
the stimulation pulses comprise inhibitory stimulation pulses; and
the urinary and/or bowel dysfunction comprises urinary and/or
fecal retention.

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24. The method of Claim 23 wherein the stimulation pulses are delivered at greater than about 50 to 100 Hz.

25. The method of Claim 20 wherein the at least one sympathetic target
5 comprises at least one of the thoracic roots, the thoracic spinal nerves, the lumbar roots, and the lumbar spinal nerves.

26. The method of Claim 25 wherein the at least one sympathetic target
comprises at least one of a root and a spinal nerve of at least one of T9, T10, T11, T12,
10 L1, and L2.

27. The method of Claim 20 wherein the at least one sympathetic target
comprises at least one of the greater splanchnic nerve, the lesser splanchnic nerve, the
least splanchnic nerve, the lumbar splanchnic nerves, the sacral splanchnic nerves, and
15 their branches.

28. The method of Claim 27 wherein the at least one sympathetic target
comprises one or more of the hypogastric nerves, the superior hypogastric plexus, and
the inferior hypogastric plexus.

29. The method of Claim 20 further comprising:
providing at least one sensor;
using the at least one sensor to sense at least one physical condition;
and
20 determining the stimulation parameters based upon the at least one
sensed condition.

30. The method of Claim 20 further comprising providing and implanting
more than one stimulator.

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31. A method for treating a patient with urgency, frequency, urinary incontinence, and/or fecal incontinence comprising the steps of:

- providing at least one means for stimulating tissue;
- implanting the at least one stimulating means adjacent to at least one
- 5 parasympathetic target that innervates at least one urinary, gastrointestinal, and/or other pelvic structure;
- providing operating power to the at least one stimulating means;
- providing stimulation parameters to the at least one stimulating means;
- generating inhibitory stimulation pulses in accordance with the stimulation
- 10 parameters; and
- delivering the inhibitory stimulation pulses to nerves and tissue adjacent to the at least one stimulating means in order to treat urgency, frequency, urinary incontinence, and/or fecal incontinence;
- wherein the stimulating means has a size and shape suitable for
- 15 placement adjacent to the at least one parasympathetic target.

32. A method for treating a patient with urinary and/or bowel dysfunction comprising the steps of:

- providing at least one means for stimulating tissue;
- 20 implanting the at least one stimulating means adjacent to at least one sympathetic target that innervates at least one urinary, gastrointestinal, and/or other pelvic structure;
- providing operating power to the at least one stimulating means;
- providing stimulation parameters to the at least one stimulating means;
- 25 generating stimulation pulses in accordance with the stimulation parameters; and
- delivering the stimulation pulses to nerves and tissue adjacent to the at least one stimulating means in order to treat urinary and/or bowel dysfunction;
- wherein the stimulating means has a size and shape suitable for
- 30 placement adjacent to the at least one sympathetic target.